

File Code: *2550 Soil Surveys

Date: *July 23, 2001

Subject: *Pipeline E.A.

To: *District Ranger, Bonners Ferry Ranger District

On July 16th and 17th of 2001, Doug Nishek and I field reviewed the proposed Pipeline Timber Sale units (units 2,5,6, 9 & 10), which had been previously tractor logged. The proposed, Pipeline Timber Sale E.A. was remanded by the Regional Forester due to the lack of cumulative effects documentation.

All of the past tractor units (2,5,6, 9 & 10), we reviewed, consist of ice contact glacial deposits, which were formed by streams or melt-waters flowing within, on top or adjacent to the Purcell lobe of the last glaciation. The resulting landscapes consist of mounds (kames), crooked ridges (eskers), flats (kame terraces/pitted outwash plains), and round holes (kettle holes). The kames, eskers and kame terraces/pitted outwash consist of mostly gravels, cobbles and stones. When Mt. Mazama ash was deposited 6700 years ago, this ash slowly worked its way down through these rocky deposits, so today, we see a mix of rock and ash on the soil surface in most of this area.

Doug and I ran numerous transects within units 2 and 6, which had the least amount of surface rock and the greatest amount of past tractor activity. Detrimental soil impacts were analyzed on 70 plots in unit 2 and on 200 plots in unit 6. Unit 2 had 7 percent detrimental soils impacts and unit 6 had 5 percent detrimental soil impacts from past tractor logging and skidding activity. Unit 2 has had numerous entries of ground-based equipment in the past.

The low detrimental impact from past tractor logging is because the high amount of rock content at the soil surface provides a tremendous amount of bearing strength. This high amount of surface rock reduces the compactive force exerted on the ash cap soils, which fills the pore space between the rocks.



A typical example of the of the high rock content found in the surface soils within the Pipeline project area. This type of soil is difficult to detrimentally compact.

We then walked through the remaining units and conducted spot checks and verified that surface rock content was equal or greater than Units 2 and 6. We found that Unit 5 had the highest surface rock content and the other remaining units were similar to unit 6.

Future harvest will not exceed Regional or Forest Plan soil quality standards because of the unique rocky nature of these soils and due to the fact that future harvest will stay mostly on existing trails. It is unlikely that future harvest will increase detrimental soil impacts much beyond existing levels.

Restoration activities on the low percentage of detrimentally impacted areas is not recommended because we would end up pulling a large amount of rock to the soil surface.

If you need further assistance, or clarification, feel free to call me.

Jerry Niehoff
Forest Soil Scientist